

CLAIMS

1. (Original) A method of treating spent alkaline pulping liquor (black liquor), comprising the steps of:
 - providing black liquor having lignin therein;
 - acidulating a phosphate containing material, wherein phosphoric acid is generated by treatment of said phosphate containing material, and
 - mixing said black liquor with phosphoric acid from said acidulated phosphate containing material to cause separation of said lignin from said black liquor, wherein clarified liquor comprising anion species including phosphate is produced.
2. (Original) The method of claim 1, wherein said phosphate containing material comprises phosphate comprising rock, said acidulating step comprising contacting said phosphate comprising rock with a sulfuric acid solution, wherein said acidulated phosphate containing material comprises an acidulated phosphate rock slurry.
3. (Original) The method of claim 2, wherein an amount of said sulfuric acid solution used in said acidulation step is less than the amount necessary for complete conversion of said phosphate rock to said phosphoric acid.
4. (Original) The method of claim 1, wherein said method includes the step of adding a water soluble, surface active, polymeric, coagulant agent to said black liquor.

5. (Original) The method of claim 4, wherein said adding step precedes said mixing step.

6. (Original) The method of claim 5, wherein a surface active agent coactive with said polymeric, coagulant agent, is added to said black liquor prior to the said mixing step.

7. (Original) The method of claim 2, further comprising the step of filtering said acidulated phosphate containing material to form a solid-free liquid phase comprising said phosphoric acid, said filtering step prior to said mixing step.

8. (Currently amended) The method of claim 1, further comprising the step of directly causticizing said clarified liquor after said mixing step using a material comprising calcium oxide, said method being exclusive of an intervening evaporating step to remove water from said clarified liquor, wherein caustic soda and a precipitate including at least one calcium phosphate comprising specie is produced.

9. (Currently amended) The method of claim ^{[[1]]} 8, wherein said ^{[[causticizing step precipitates at least one]]} calcium phosphate comprising species includes $\text{Ca}(\text{H}_2\text{PO}_4)_2$.

10. (Currently amended) The method of claim ~~[[9]]~~ 8, wherein said calcium phosphate comprising species includes at least one selected from the group consisting of calcium ~~[[monophosphate]]~~ CaHPO_4 , and $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$.

11. (Original) The method of claim 1, wherein said black liquor is obtained from a kraft process pulping plant.

12. (Original) The method of claim 1, wherein said black liquor is obtained from a soda process pulping plant.

13. (Currently amended) Solid products resulting from the method of claim ~~...~~ ~~[1]~~ 8.

14. (New) The method of claim 1, wherein said phosphate containing material comprises low grade phosphate comprising rock.

15. (New) The method of claim 14, wherein a weight percentage of P_2O_5 in said low grade phosphate comprising rock is less than or equal to 29.5%.

16. (New) The method of claim 2, wherein said mixing step is performed in the presence of said phosphate comprising rock.

17. (New) The method of claim 1, wherein said acidulation step is a single pass process, whereby recycling is not utilized.